

CLAIMS**What is claimed is:**

1. In a system for automatic generation of output from a data query system, a server system comprising:

5 service processing means for processing at least one scheduled service against a database, each service comprising at least one query to be performed against the data;

subscription means for enabling one or more subscribers to subscribe to receive output from one or more of the services; and

audible output forwarding means for automatically forwarding audible output
10 from the services to one or more subscriber output devices specified for that service by the subscriber.

2. The server system of claim 1 wherein the service comprises an alert service and wherein the output forwarding means automatically forwards audible output from an alert service only when one or more alert criteria are satisfied.

15 3. The server system of claim 1 wherein the service comprises a scheduled service and wherein the audible output forwarding means automatically forwards audible output from a scheduled service each time the schedule service is processed.

4. The server system of claim 1 wherein the server system stores one or more services for processing and wherein the subscription means enables subscribers to
20 subscribe to one or more services from the list.

5. The server system of claim 4 wherein the subscription means enables specifying subscribers to a service by a dynamic recipient list and further comprising

dynamic recipient list resolution means for resolving the subscribers in the dynamic recipient list and providing that list of subscribers to the audible output forwarding means.

9. The server system of claim 1 wherein the audible output forwarding means
5 forwards the output to a two-way communication device.

10. The server system of claim 9 wherein the two-way communication device comprises a telephone.

11. The server system of claim 1, further comprising personalization means for enabling users to personalize the one or more services.

10 12. The server system of claim 1 further comprising output formatting means for formatting the audible service output according to styles specified for each user output device specified to receive that service output.

13. The server system of claim 1 wherein the data query system comprises an OLAP system.

15 14. The server system of claim 1 further comprising personalization input means for enabling a subscriber to a service to specify personalized information to be applied to the output of the service for that particular subscriber.

15. The server system of claim 14, wherein subscribers specifies personalization information for multiple user output devices of that particular subscriber
20 and wherein the service processing system applies the personalization information for each user output device for the subscriber to generate an audible service output for each user output device for that subscriber.

16. A method for enabling users to subscribe to output services from a data query system, the method comprising the steps of:

enabling users to subscribe to one or more services, each service comprising at least one query to be performed by the data query system;

5 processing the one or more services for the users; and

forwarding audible service output automatically to one or more subscriber output devices specified for that service.

17. The method of claim 16, further comprising the step of enabling users to personalize the services to which the users subscribe.

10 18. The method of claim 16, wherein the service comprises an alert service and wherein the forwarding step involves forwarding output from an alert service only when one or more alert criteria are satisfied.

19. The method of claim 16 wherein the service comprises a scheduled service and wherein the forwarding step involves forwarding output from a scheduled service
15 each time the schedule service is processed.

20. The method of claim 16 wherein the step of forwarding comprises the step of forwarding output from the service to an output device selected from the group consisting of: electronic mailbox, facsimile, printer, mobile phone, telephone, PDA, and pager.

20 21. The method of claim 16 further comprising the step of formatting the service output according to styles specified for each user output device specified to receive that service output.

22. A medium having processor readable program code embodied therein for generating audible output from a data query system to user output devices, the processor readable code in the medium comprising:

code for causing a processor to process at least one scheduled service in an on-line analytical processing system and generating a service output, each service comprising at least one query to be performed by the data query system; and

code for causing a processor to forward audible service output to the one or more subscribers at a user communications devices specified for that service.

23. The medium of claim 22 further comprising code for causing a processor to format the audible service output according to styles specified for each user output device specified to receive that service output.

24. The medium of claim 22 further comprising code for causing a processor to enable administrator control over the processing and forwarding of services.

25. In a system for automatic generation of output from a database system to a two-way interactive communication device comprising:

service processing means for processing at least one scheduled service in an on-line analytical processing system, each service comprising at least one query to be performed based on data in the database; and

output forwarding means for automatically forwarding audible output from the services to one or more subscriber output devices specified for that service to a two-way interactive communication device.

26. The system of claim 25 wherein the service comprises an alert service and wherein the output forwarding means automatically forwards output from an alert service only when one or more alert criteria are satisfied.

27. The system of claim 25 wherein the service comprises a scheduled service
5 and wherein the output forwarding means automatically forwards output from a scheduled service each time the schedule service is processed.

28. The system of claim 26, further comprising personalization means for enabling users to personalize the one or more services.

29. The system of claim 25 further comprising output formatting means for
10 formatting the audible service output according to styles specified for each user output device specified to receive that service output.

30. A method for enabling users to subscribe to output services from a data query system and receive output on a two-way communication terminal device, the method comprising the steps of:

15 enabling users to subscribe to one or more services, each service comprising at least one query to be performed on the database;

processing the one or more services for the users; and

forwarding service output automatically to one or more subscriber two-way communications devices specified for that service.

20 31. The method of claim 30, further comprising the step of enabling users to personalize the services to which the users subscribe.

32. The method of claim 30, wherein the service comprises an alert service and wherein the forwarding step involves forwarding output from an alert service only when one or more alert criteria are satisfied.

33. The method of claim 30 wherein the service comprises a scheduled service
5 and wherein the forwarding step involves forwarding output from a scheduled service each time the schedule service is processed.

34. The method of claim 30 further comprising the step of formatting the service output according to styles specified for each user output device specified to receive that service output.

10 35. A system for automatic generation of output from a data query system, a server system comprising:

service processing means for processing at least one scheduled service by a data query system, each service comprising at least one query to be performed against the database;

15 subscription means for enabling one or more subscribers to subscribe to receive output from one or more of the services and to receive the output as an audible output or a visual output; and

output forwarding means for automatically forwarding output from the services to one or more subscriber output devices specified for that service by the subscriber in either
20 audible or visual output as selected by the subscriber.

36. The server system of claim 35 wherein the service comprises an alert service and wherein the output forwarding means automatically forwards output from an alert service only when one or more alert criteria are satisfied.

37. The server system of claim 35 wherein the service comprises a scheduled
5 service and wherein the output forwarding means automatically forwards output from a scheduled service each time the schedule service is processed.

38. The server system of claim 35 wherein the subscriber selects to receive audible output at a two-way communication device.

39. The server system of claim 38 wherein the two-way communication device
10 comprises a telephone.

40. The server system of claim 35, further comprising personalization means for enabling users to personalize the one or more services.

41. The server system of claim 35 further comprising output formatting means for formatting the service output according to styles specified for each user output device
15 specified to receive that service output.

42. The server system of claim 35 wherein the data query system comprises an OLAP system.

43. The server system of claim 35 further comprising personalization input means for enabling a subscriber to a service to specify personalized information to be
20 applied to the output of the service for that particular subscriber.

44. The server system of claim 43, wherein subscribers specifies personalization information for multiple user output devices of that particular subscriber

and wherein the service processing system applies the personalization information for each user output device for the subscriber to generate a service output for each user output device for that subscriber.

45. A method for automatically generating output from a data query system, a
5 server system comprising:

service processing means for processing at least one scheduled service by a data query system, each service comprising at least one query to be performed against the database;

subscription means for enabling one or more subscribers to subscribe to receive
10 output from one or more of the services and to receive the output as an audible output or a visual output; and

output forwarding means for automatically forwarding output from the services to one or more subscriber output devices specified for that service by the subscriber in either audible or visual output as selected by the subscriber.

15 36. The server system of claim 35 wherein the service comprises an alert service and wherein the output forwarding means automatically forwards output from an alert service only when one or more alert criteria are satisfied.

37. The server system of claim 35 wherein the service comprises a scheduled service and wherein the output forwarding means automatically forwards output from a
20 scheduled service each time the schedule service is processed.

38. The server system of claim 35 wherein the subscriber selects to receive audible output at a two-way communication device.

39. The server system of claim 38 wherein the two-way communication device comprises a telephone.

40. The server system of claim 35, further comprising personalization means for enabling users to personalize the one or more services.

5 41. The server system of claim 35 further comprising output formatting means for formatting the service output according to styles specified for each user output device specified to receive that service output. *W*

42. The server system of claim 35 wherein the data query system comprises an OLAP system.

10 43. The server system of claim 35 further comprising personalization input means for enabling a subscriber to a service to specify personalized information to be applied to the output of the service for that particular subscriber.

44. The server system of claim 43, wherein subscribers specifies personalization information for multiple user output devices of that particular subscriber
15 and wherein the service processing system applies the personalization information for each user output device for the subscriber to generate a service output for each user output device for that subscriber.

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